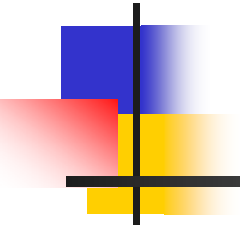


California Utility Allowance Calculator: CUAC



California Energy Commission
CEPE Workshop/Training

March 10, 2009

Secretary of State Building, Sacramento

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Outline

- History leading to CUAC
- Approved use
- Overview of CUAC
- Examples
 - All units of same type in one model
 - Model all configurations of each unit type
- Recap of important issues
- Q&A





History

- For LIHTC projects, the IRS establishes how utility cost estimates are obtained
- Before July 2008, there were two ways:
 - Use the local PHA's Utility Allowance Schedule
 - Obtain a utility cost estimate from the local utility – based on existing comparables
- Both significantly overestimated utility costs for energy efficient new construction





Affordable Housing Advisory Committee - NSHP

- Broad industry representation
- Two issues in the way of EE and PV
 - Net metering
 - Utility allowance structure
- California Energy Commission funding





2008 IRS Ruling

- Allows the use of an “Energy Consumption Model”
 - By “a properly licensed engineer or qualified professional **approved by [TCAC]**”
 - The professional must not be “related” to the building owner.
 - Model must represent current building condition and current utility rates
 - Owner must review the basis of the calculation at least annually and redo if the utility rates increased





TCAC Regulations

- For LIHTC applications, developers can submit utility cost estimates from the CUAC
- Professional using the CUAC to calculate utility allowances must be:
 1. A Certified Energy Plans Examiner (CEPE),
AND
 2. Either:
 - A CA licensed electrical or mechanical engineer, or
 - A qualified HERS Rater
- Construction will require HERS inspections





Administrative Details

- **All** forms from/of the CUAC must be submitted, with appropriate signatures
- CUAC analysis **MUST** be redone at the time of lease up
- Owner must review the utility allowance annually
 - Redo the runs using the current CUAC version and the initial project description
 - Tariffs will have been updated if they changed





Approved Use

- Applications for LIHTCs for New Construction – only
- Not for:
 - LIHTC rehab
 - Existing properties (TCAC or other)
 - HUD funded properties
 - RHS funded properties
 - Local Public Housing Authorities





CUAC Structure

- Input energy use for heating, cooling, and DHW from EnergyPro (or similar program)
- Input monthly solar values from CEC PV program
- Lighting, cooking and appliance energy are calculated within CUAC based on:
 - Description of units
 - Choice of Energy Star appliances (or not)
 - Choice of high efficacy lighting (or not)
- Water and sewer are user inputs based on local fee structure

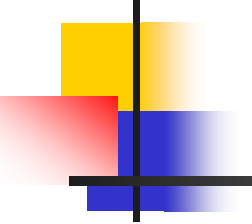




Steps in Using the CUAC

- Describe the project:
 - Electricity provider
 - Gas provider
 - Number of units (by type - # of bedrooms)
 - Address, owner info, etc.
 - Percent of solar to common area (if PV included)
 - Other tenant-paid utilities
- Obtain monthly outputs from EnergyPro





Two Ways to Complete the EnergyPro Analysis for the CUAC

1. Separate runs for each distinct configuration of each unit type
2. Separate runs for each unit type including all configurations

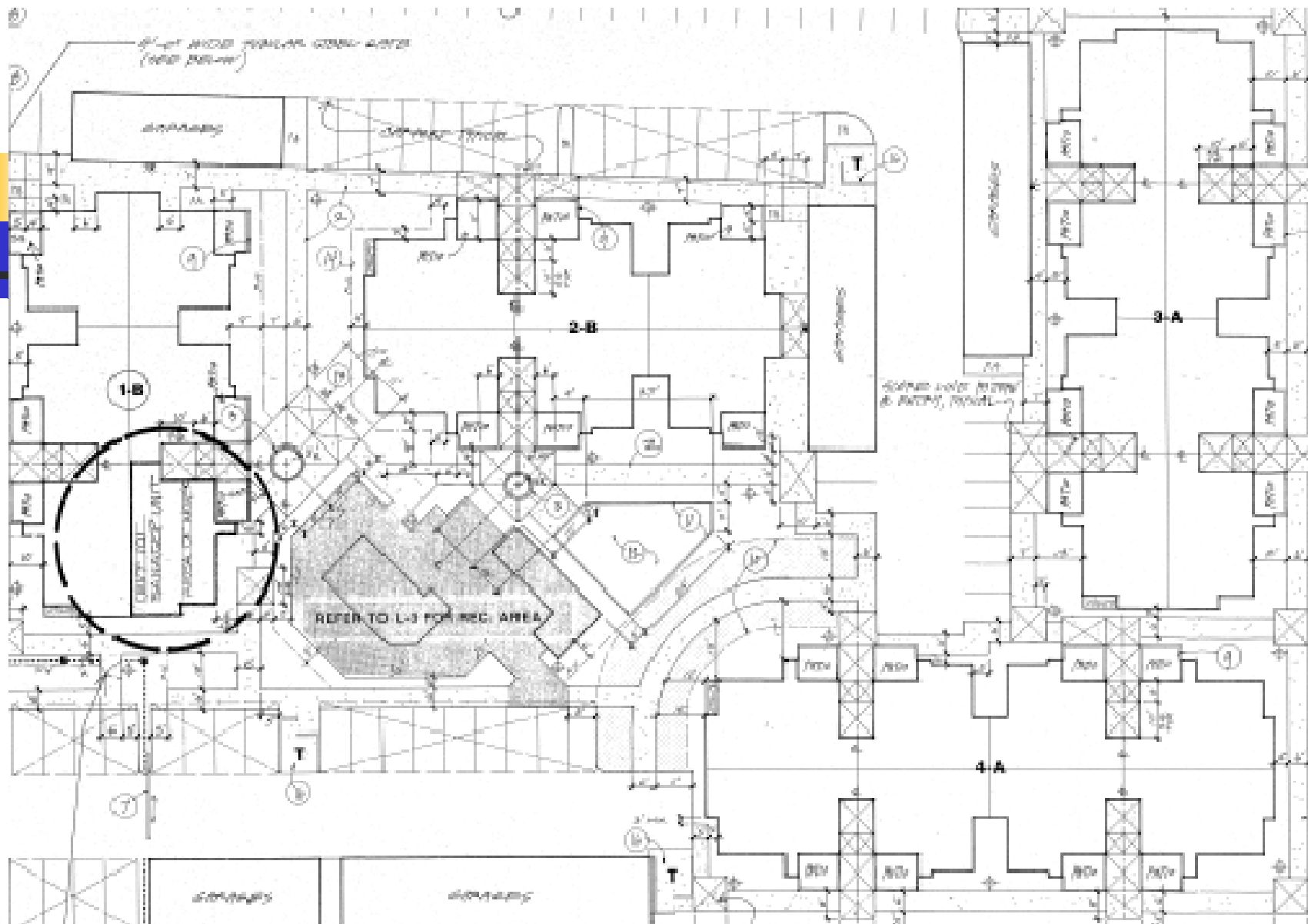


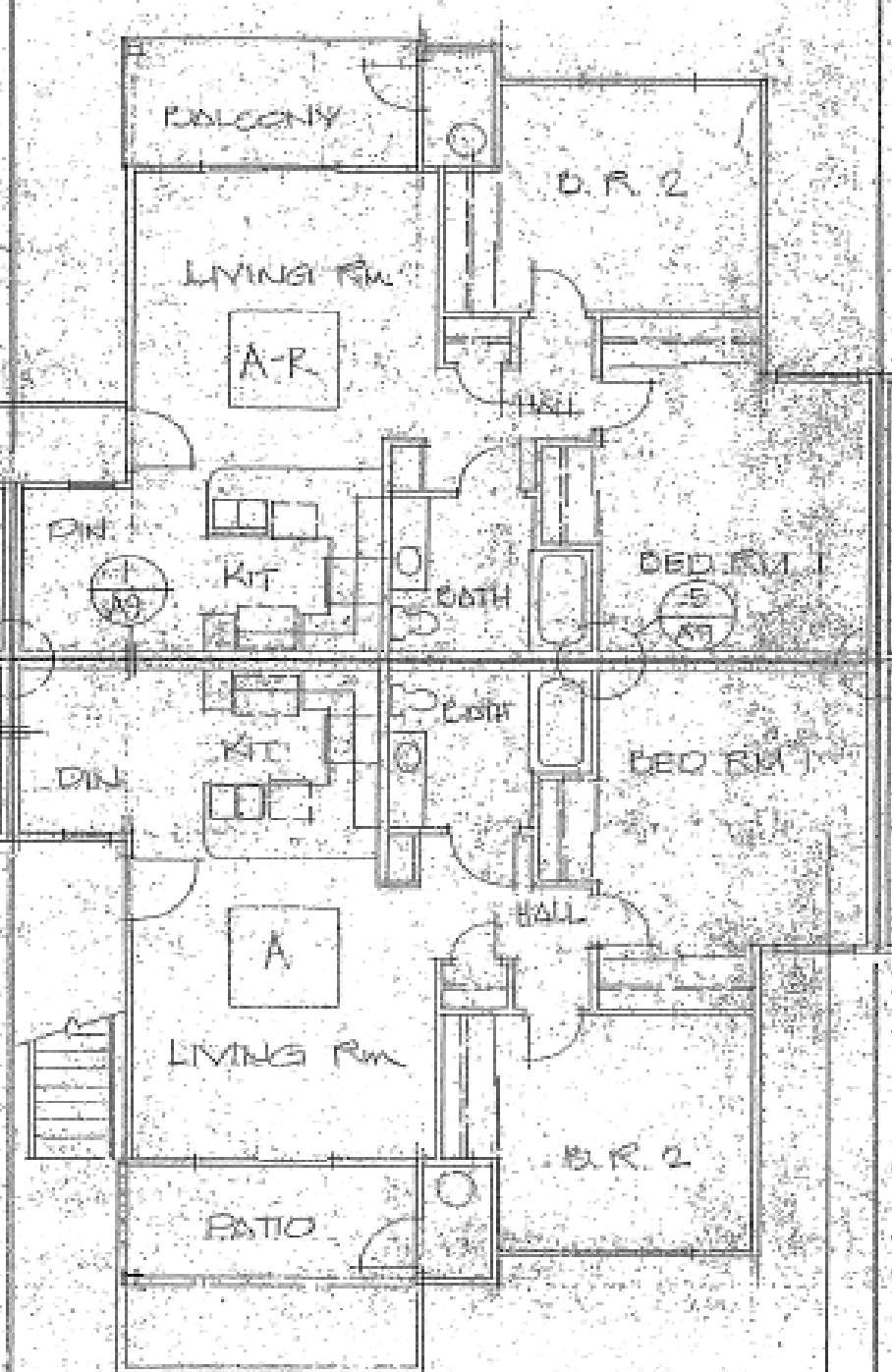
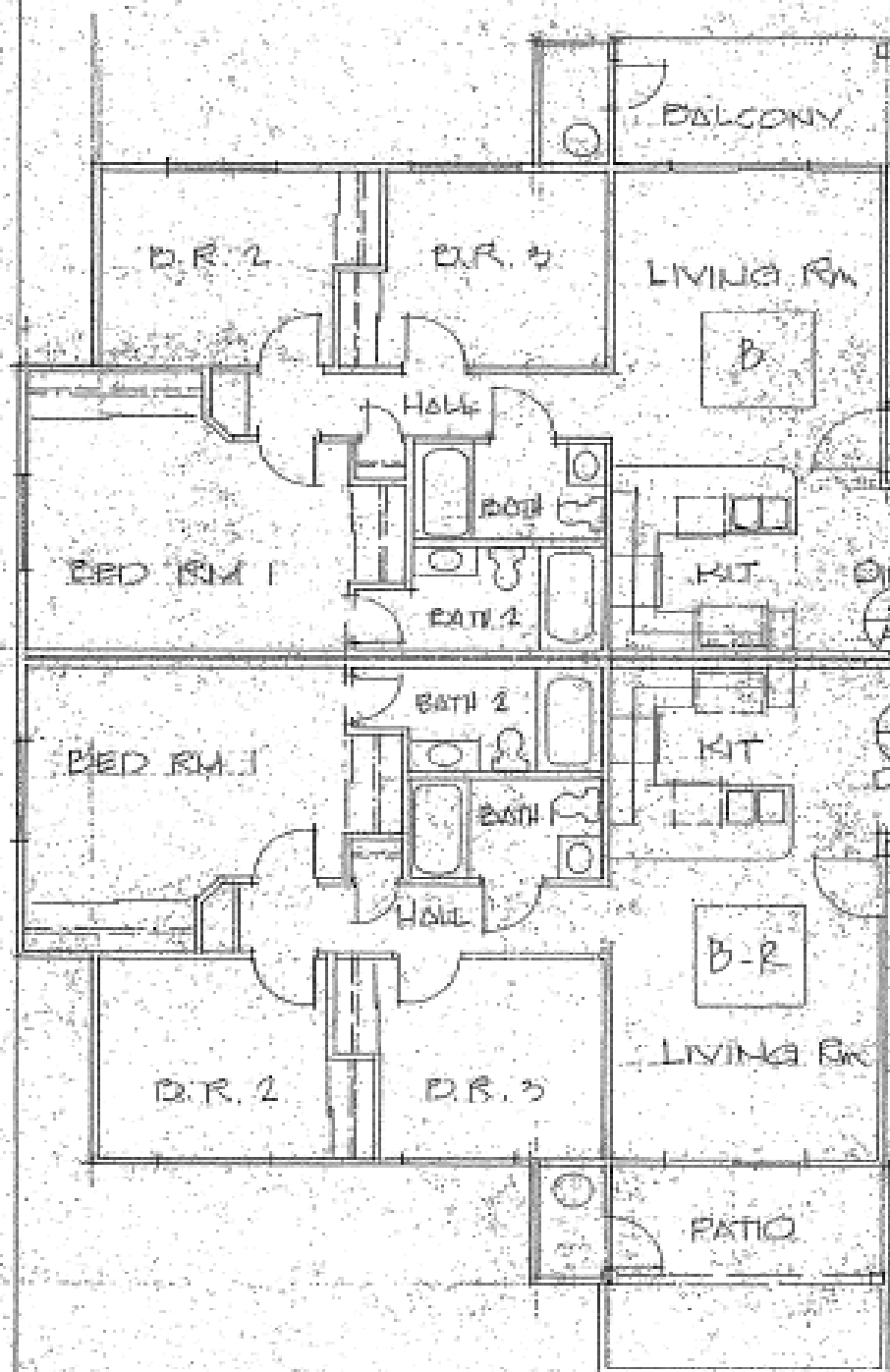


1: Weighted Average Method

- EnergyPro models need to be run for each unique apartment description. E.G.,
 - Number of bedrooms and bathrooms
 - Significant size differences
 - Top, middle, or ground floor
 - Corner or middle apartment
 - Orientation
- Weight average results
 - CEC Weighted Averaging spreadsheet









Elevation





Example

- Weighted averaging worksheet

[..\..\..\Desktop\WeightedMeanWorksheets February09 sample.xls](#)



2: Single-Run by Apartment Type

- Create a building model with every 2-bedroom unit (for example)
 - Adiabatic walls (floor, ceiling) where 2-bedroom units don't exist
 - If project encompasses several buildings, you will need to do a model for each building
 - Divide kBtu and kWh values (from ECON1) by the number of 2-bedroom apartments





Example

- This example is actually a hybrid
 - All the 2-Bdrm units in one building
 - Other buildings are done separately, the same way
 - Then all 2-Bdrm units are combined
- [..\..\..\Desktop\SanJacinto-WholeBuilding v3.xls](#)





Energy Pro Outputs

- Do NOT use the CF-1R output for electricity
 - TDV versus site energy
 - Annual versus monthly values
- ECON1 provides monthly site energy

[..\..\..\Desktop\SanJacinto Bldg D -2BR -8unit V2.pdf](#)





Example

- Now, we're going to switch to the CUAC

..\..\..\..\CUAC\UACTool-Rev23.mdb

Watch for “Security Warning”





If you have Solar PV

- CEC PV is run for specific system and project
 - Brand, model, size, rating
 - Location and orientation
 - Surrounding obstructions
- CEC PV output (input to the CUAC) is a series of twelve monthly kWh values





Downloads

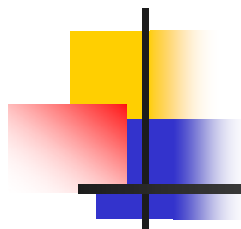
- Download the ZIP file containing the California Utility Allowance Calculator (ZIP File, 3.4 MB) at:

http://www.gosolarcalifornia.org/affordable_housing/cuac/CUAC.zip

- Download the Weighted Averaging Excel file at:

http://www.gosolarcalifornia.org/affordable_housing/cuac/WeightedMeanWorksheets.xls

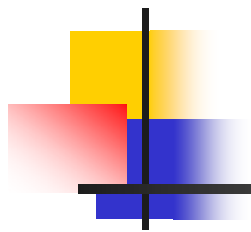




Download the California Utility Allowance
Calculator User Guide (MS Word file, 76kb)
at:

[http://www.gosolarcalifornia.org/affordable_housing/
cuac/CUAC_User_Guide.pdf](http://www.gosolarcalifornia.org/affordable_housing/cuac/CUAC_User_Guide.pdf)





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Questions?

